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REMARKS

In view of the preceding amendments and the following remarks, Applicants respectfully request the Examiner to reconsider the patent application identified above and withdraw the present rejection. Claims 1-3 5-10 are pending in the present application, all of which stand currently rejected.

Specification:

The Examiner objected to the specification regarding antecedent basis for the claimed subject matter. In particular, the Examiner was unable to find a description in the specification of "the proximal ends of the inner and outer tubular bodies being sealed to the hypotube at a point defined proximal to a transition between the intermediate and distal portion of the hypotube".

This seal is depicted in Figures 2, 3, 5, and 22, all of which show the proximal ends of the inner and outer tubular bodies being sealed to the hypotube at a point defined proximal to a transition between the intermediate and distal portions of the hypotube. Also, this seal is described several times in the present application:

The inner and outer tubes are affixed near their proximal ends a point on the hypotube; and they are affixed near their distal ends to the balloon.

(Application, page 4, lines 18-19.)

The hypotube defines a transition point at a distal end of the indented tubing portion, and at a proximal end of the distal portion. At or near this transition, the proximal ends of the inner and outer tubular bodies are sealed to the hypotube. At this transition seal, the proximal end of the inner tubular body may be partially received within a distal portion of the longitudinal indentation of the hypotube, and the outer tubular body proximal end surrounds and is sealed to both the inner body and the hypotube.

(Application, page 5, lines 3-8.)

Another reason the present invention improves cost-effectiveness of manufacturing is that only one intermediate shaft seal is needed, rather than a

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separate seal of hypotube to polymer tube and a seal at the proximal guidewire port.

(Application, page 9, lines 6-8.)

During manufacture of the transition seal, another advantage of the present invention is that the crescent-shaped tubular portion of the hypotube at the transition will tend to hold itself open during sealing of the inner and outer bodies to the hypotube. Accordingly, a conventional removable sealing mandrel to keep the inflation lumen open during sealing is unnecessary.

(Application, page 9, lines 18-21.)

35 U.S.C. §103:

The Examiner rejected Claims 1-3, 5, 6, and 8-10 under 35 U.S.C. §103(a) over Keith (U.S. 5,217,482) in view of Happ et al. (U.S. 6,575,958).

However, Applicants respectfully submit that the cited references fail to teach or suggest the present invention, as recited in the claims. For example, Claim 1 includes the following limitations, among others:

a hypotube having a proximal tubular portion, an intermediate tubular portion having a longitudinal indentation, and a distal portion with an arcuate non-tubular cross-section;

an inner tubular body having a proximal and distal end, and defining a proximal and distal guidewire port at each end respectively, and a guidewire lumen extending between the guidewire ports;

an outer tubular body having a proximal and distal end, and surrounding at least a portion of the inner tubular body;

the proximal ends of the inner and outer tubular bodies being affixed together and sealed to the hypotube at a point defined proximal to a transition between the intermediate and distal portions of the hypotube;

* * *

an inflation lumen extending from a proximal end of the hypotube, through the hypotube proximal and intermediate tubular portions, and

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through an annular space between the outer and inner tubular bodies,
into an interior of the balloon;

*the distal portion of the hypotube extending a distance into the outer
tubular body; the intermediate tubular portion and the distal portion of
the hypotube providing a transition in flexibility between the tubular
portions of the hypotube to the inner and outer bodies;*

the balloon catheter thus having a rapid-exchange configuration.

The Examiner stated that "Keith shows ... distal portion of the hypotube has an arcuate cross-section (72B) and extends into the outer tubular body." Applicants note the Examiner may mean reference numeral 74B.

With particular reference to Keith, a hypotube is shown that is indented, as indicated in Figure 3 of the Keith reference, but its full length is tubular. Accordingly, it fails to teach or suggest the hypotube component of the present invention, "having a proximal tubular portion, an intermediate tubular portion having a longitudinal indentation, and a distal portion with an arcuate non-tubular cross-section" which extends "a distance into the outer tubular body; providing a transition in flexibility between the tubular portions of the hypotube to the inner and outer bodies".

The Examiner is also correct that "Keith is silent on the distal portion of the hypotube having an arcuate non-tubular cross-section."

The Examiner stated it "would have been obvious ... to make the distal portion of the hypotube of Keith with a non-tubular cross-section as taught by Happ et al. as a non-tubular cross-section would lower the overall profile of the catheter and provide increased flexibility".

However, the Examiner's proposed combination is neither simple, nor obvious. For example, in Figure 5 of Keith, the hypotube is again tubular throughout its full length, including that portion distal

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of the inner and outer tubular body proximal ends. Also, "[k]ink-resistant structure 210 includes coil member 212." In contrast, in Figure 9 of Happ et al. the hypotube has a non-tubular portion or "step" beginning proximal of (and extending distal to) the proximal end of the inner tubular body. So the two designs teach away from each other. Also, Happ et al. discloses a transition including a "polymeric tubular member 211" between the hypotube and the inner body proximal end, which also teaches away from a combination with Keith.

The Examiner stated the suggested combination "would result in the catheter of Keith being structured such that the proximal ends of the inner and the outer tubular bodies would be sealed to the hypotube at a point defined proximal to a transition between the intermediate and the distal portions of the hypotube." However, the non-tubular portion of the hypotube in Happ et al. begins proximal to the inner and outer tubes, so there is no tubular hypotube at that point.

Accordingly, the suggested combination of the hypotube of Happ et al. with the features of Keith would not result in the claimed invention.

The Examiner rejected Claim 7 under 35 U.S.C. §103(a) over Keith and Happ et al., and further in view of Ressemann et al. (U.S. 5,425,711). Applicants respectfully submit that the cited references fail to teach or suggest the subject matter of Claim 7, for the reasons set forth above.

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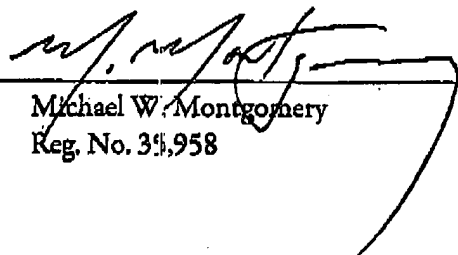
Accordingly, Applicants respectfully request the Examiner to allow the present invention.

Respectfully submitted,
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